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Aegopinella lozeki n. sp. and *Aegopinella ressmanni* (West.) *(Gastropoda, Zonitidae)* from the Early Pleistocene of Poland

(Pp. 481—488, pls. XXXIX—XLI, 2 text-fig.)

***Aegopinella lozeki* n. sp. i *Aegopinella ressmanni* (West.) *(Gastropoda, Zonitidae)* z wczesnego plejstocenu Polski**

***Aegopinella lozeki* n. sp. и *Aegopinella ressmanni* (West.) *(Gastropoda, Zonitidae)* из раннего плейстоцена Польши**

Abstract. This paper is a description of a new species of the family *Zonitidae* from the Early Pleistocene deposits at Kielniki near Częstochowa. The first fossil locality of *Aegopinella ressmanni* (West.) in Poland is given.

In the course of a study of the Early Pleistocene material of snails from Kielniki (50°45′ N, 19°17′ E — Fig. 1d) near Częstochowa two noteworthy species were found among the members of the family *Zonitidae*. One of them appeared a new species, whereas the other one was probably *Aegopinella ressmanni* (West.), living now and also reported from a great many Quaternary localities but never hitherto from the Quaternary of Poland.

The stratigraphy of the locality at Kielniki has not — as yet — been closely investigated. Apart from snail shells of over 30 species, remains of small mammals as well as amphibians and reptiles have also been found (*Triturus* sp., *Bufo* sp., *Hyla* cf. *arborea*, *Rana* cf. *temporaria*, *Lacerta* sp. and *Natrix* cf. *natrix* — M. Młynarski, personal communication); these will be elaborated later. A preliminary study has shown that red-clay deposits which once filled the rock fissures occur in the slopes of the present quarry. These deposits are referred

to the Early Pleistocene, which according to K. KOWALSKI (pers. comm.) is supported by the mammalian fauna including, among other forms, members of the genera *Glis* BRISSON, 1762, *Glirulus* THOMAS, 1906, *Muscardinus* KAUP, 1829, *Spalax* GUELDENSTAEDT, 1770, *Lemmus* LINK, 1795, *Allophaiomys* KORMOS, 1933, *Ungaromys* KORMOS, 1933, *Mimomys* MAJOR, 1902, *Pliomys* MEHELY, 1914 and *Clethrionomys* TILESIUS, 1850.

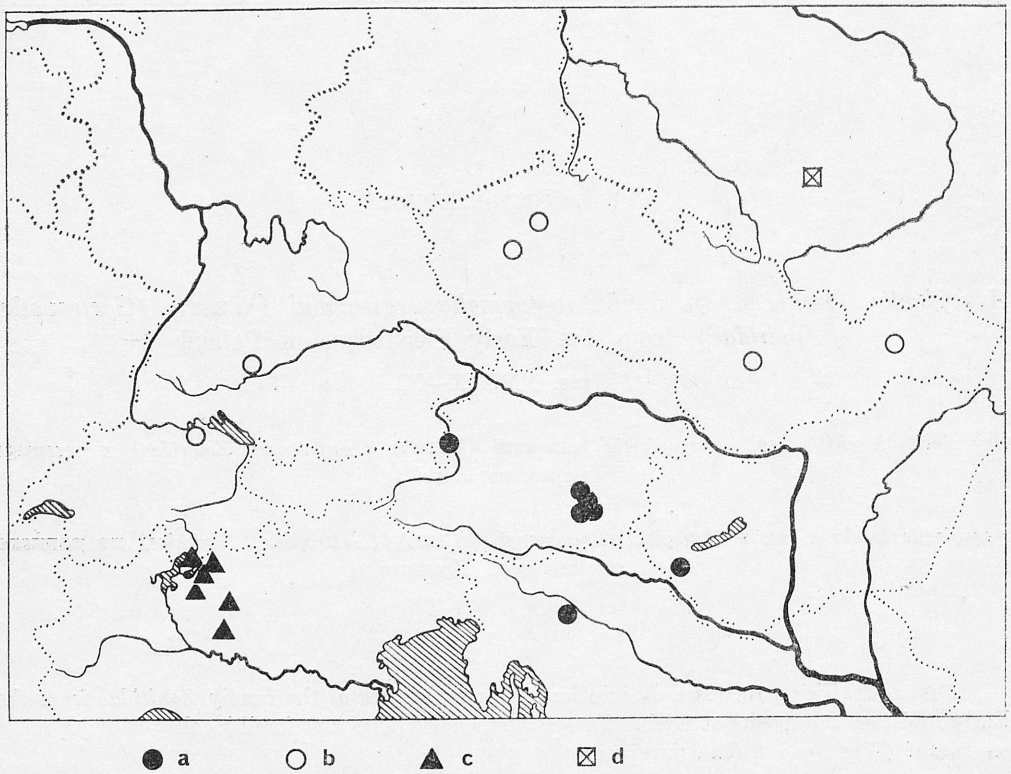


Fig. 1. Distribution of *Aegopinella ressmanni* (WEST.) and *Retinella hiulca* (ALB.): a — *Ae. ressmanni* (WEST.), recent localities; b — *Ae. ressmanni* (WEST.), fossil localities; c — *Ret. hiulca* (ALB.), recent localities; d — *Ae. ressmanni* (WEST.), locality at Kielniki

I should like to express my grateful thanks to Prof. Adolf RIEDEL (Warsaw) and Dr Vojen LOŽEK (Prague) for much help in the preparation of this study.

Aegopinella lozeki n. sp.

(Fig. 2, Pl. XXXIX)

Material: Holotype and three paratypes — Institute of Systematic and Experimental Zoology, Polish Academy of Sciences, Cracow, one paratype — Institute of Zoology, Polish Academy of Sciences, Warsaw, one paratype —

Geologický ústav CSAV, Prague. Seventeen shells belonging to juveniles or damaged and fragments of different parts of shells.

Type locality: Kielniki, Częstochowa District, Katowice Province.

Type layer: Pleistocene, fossil deposits from a period corresponding probably with the Günz Glaciation.

Description of shell: Shell with hardly conical spiral, almost flat. $4\frac{1}{3}$—$4\frac{1}{2}$ coils, poorly vaulted, separated by relatively shallow suture. Last coil more than twice as broad as penultimate, slightly lowered at aperture. Columellar pit very large and cupshaped. Upper surface of coils striated regularly, densely and strongly, the striation being weaker at the circumference. On the lower side the striae are distinct and regular and extend deep into the columellar pit. They are well seen on all coils. Aperture obliquely elliptic, flattened from above and vaulted at bottom. Spiral striation very poorly marked.

Measurements of holotype: width — 11·4 mm, height — 6 mm.

Measurements of paratypes: width — 9—11·6 mm, height — 4·5—6 mm.

Name derivation: This species is dedicated to the well-known investigator of Quaternary molluscs, Vojen Ložek (Prague).

In the study material this species is the most abundant member of the family *Zonitidae*. The specimens are generally well preserved, but in each case parts of the apertural region are broken off. The microsculpture is perfectly well seen in all, both adult and juvenile, specimens. It consists of exceedingly strong and dense striations, which are particularly distinct on the bottom side of the shell. The striation of this type has not hitherto been met with among the species, both modern and fossil (from the Pliocene and Pleistocene) of the family *Zonitidae*. In some modern American members of the genus *Nesovitrea* Cooke, 1921 striation may occur on the bottom side, but it has the form of

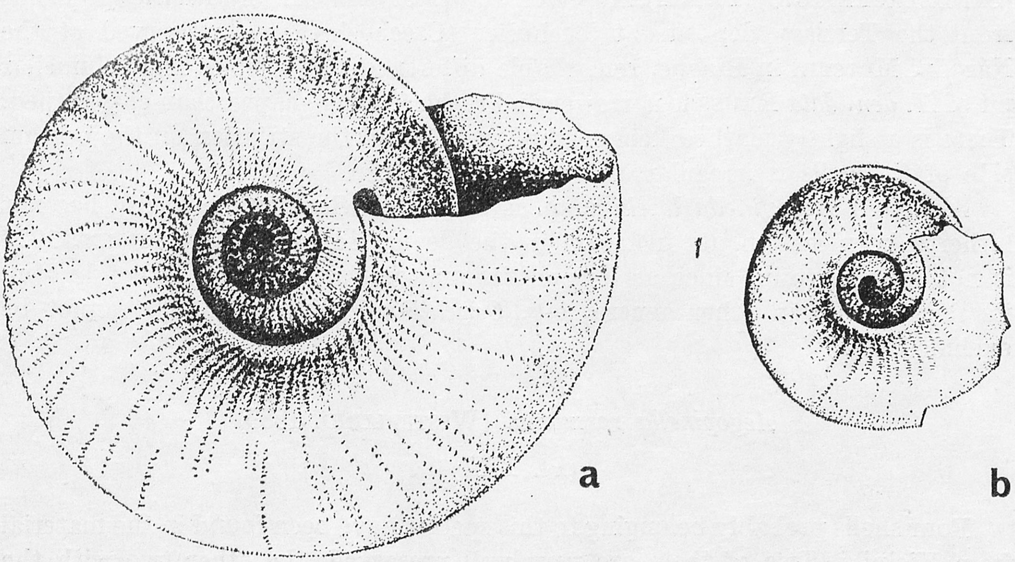


Fig. 2. *Aegopinella lozeki* n.sp. a — holotype, width 11·4 mm; b — young specimen

sparse gentle streaks or ridges. These are mostly small species with a narrow columellar pit (BAKER, 1931; PILSBRY, 1946).

Out of the contemporary European *Zonitidae*, *Aegopinella graziadei* (BOECKEL, 1940), living in a small area in Northern Italy, in the region of Vicenza and Trento (FORCART, 1959), most resembles *Ae. lozeki* n. sp. On the bottom side of the shell of this species there is dense striation, which however in comparison with our species is very feebly developed. In addition, in *Ae. lozeki* n. sp. this striation is very distinctly marked starting from the second coil, which can be seen very well in the large cup-shaped columellar pit, whereas in *Ae. graziadei* (BOECKEL) it is invisible on young coils, even though the columellar pit is also rather large and all the coils are seen in it.

A comparison of the bottom aspect of shells of these two species (the specimens of *Aegopinella graziadei* (BOECKEL) come from the collection of the Institute of Zoology, Polish Academy of Sciences, in Warsaw) very well shows the differences in the width of the columellar pit, which is expressed by the following ratios of this width to the width of the whole shell:

Aegopinella graziadei (BOECKEL)	*Aegopinella lozeki* n. sp.
1:4·5	1:3·4
1:5	1:3·4
1:4·1	1:3·7

As can be seen from this juxtaposition, in *Ae. graziadei* the columellar pit occupies less, and often considerably less, than a quarter of the shell width, whereas in *Ae. lozeki* n. sp. it is wider and usually occupies two-sevenths of the shell width.

Ae. lozeki n. sp. somewhat resembles Tertiary *Hyalinia denudata* REUSS, 1849 (SANDBERGER, 1875) (Pl. XL). However, at a close comparison with the specimens from the Tertiary deposits at Tuchořice (Czechoslovakia), preserved at the Národni Muzeum in Prague, remarkable differences are visible. The columellar pit of *H. denudata* REUSS is narrower and rather funnel-shaped than cup-shaped. There is a slightly marked keel on the last coil and the striation on the bottom side of the coils is irregular and very poorly seen.

Although *Aegopinella lozeki* n. sp. is a species which undoubtedly has not hitherto been known, its inclusion in the genus *Aegopinella* LINDHOLM, 1927 is not quite certain, since as long as its anatomical structure is not known, its membership in other genera, e.g. *Oxychilus* FITZINGER, 1833, cannot be excluded.

Aegopinella ressmanni (WESTERLUND, 1883)

(Pl. XLI)

Four shells probably belonging to this species have been found in the material from Kielniki. Two of them are very well preserved, the other two with the apertural parts broken off and the embryonic coils damaged. The measurements

of the undamaged specimens are: width — 11·55 and 13·50 mm and height — 7·05 and 7·50 mm, respectively.

For a long time *Aegopinella ressmanni* (West.) was being confused and identified with South Alpine *Retinella hiulca* (Albers, 1850), which Boeckel (1940) distinguished definitively from the former on the basis of conchological studies. It is relatively easy to observe one of the main conchological differences between these species, that in surface microsculpture, on contemporary material. The other differences, in the width and height of the spiral, the width of the columellar pit and the aperture shape, concern variable characters and thus cannot be used as the only bases for the division of these two species. The microsculpture of the contemporary specimens of *Aegopinella ressmanni* (West.) consists of very dense and distinct transverse and longitudinal striae, which form a reticular structure (visible at as low a magnification as 20 times) like that in *Aegopinella pura* (Alder, 1830) (Riedel, 1957). The surface of the shell in the contemporary specimens of *Retinella hiulca* (Alb.) differs from that described above in that its striae, especially the radial ones, are not so distinct and the whole network seems to be washed away. This difference should as a rule be seen also in fossilized shells deprived of the conchiolin layer. That this is so may be evidenced by the fact that other species of the genus *Aegopinella* Lindh. found in the same material have their reticular microsculpture in a perfect state of preservation. In describing fossil specimens of *Aegopinella ressmanni* (West.) from Schmiechen, Dehm (1951), too, writes that their transverse and longitudinal striations are well seen. Unluckily, no such microsculpture can be observed in the specimens of *Ae. ressmanni* (West.) from Kielniki, which may have been caused by the destruction of the shell surface resulting from the digestion of calcium carbonate. In this connection, it is hard to decide on the basis of their surface structure whether these specimens really belong to *Ae. ressmanni* (West.) or whether they are members of *Retinella hiulca* (Alb.). However, the zoogeographic criteria indicate the membership of the specimens from Kielniki in *Ae. ressmanni* (West.) (Fig. 1). The present distribution of *Ae. ressmanni* (West.) spreads from the eastern Alps in the west to south-western Hungary and the foreland of the Balkans in the east. In the south this species ranges as far as Slovenia, whereas its northernmost locality lies near Matzing on Obertrumer See (Forcart, 1959). On the other hand, at present *Retinella hiulca* (Alb.) lives in a small area in the southern foreland of the Alps, from Maggiore Lake to the Bergamasche Alps (Forcart, 1960). Forcart (1960) regards its only insular locality given by Boeckel (1940) from Portugal as questionable.

In the Pleistocene *Ae. ressmanni* (West.) had a wider distribution, although, as there is no material evidence, it is difficult to decide whether all the localities mentioned for the specimens identified as "*hiulca*" refer to *Ae. ressmanni* (West.) or whether in some cases we are actually concerned with the localities of *Retinella hiulca* (Alb.). Ložek (1964) gives four localities of *Ae. ressmanni* (West.) from Czechoslovakia, the oldest of which dates from the Cromerian Interglacial

(Zlatý Kůň). Some fossil localities of this species occur also in Germany (FORCART, 1959). The findings from interglacial calc-tuffs at Schmiechen near Blaubeuren and from Fluringen near Schaffhausen indicate that the distribution of *Ae. ressmanni* (WEST.) in the Quaternary ranged farther to the west than it does nowadays. For this reason, the presence of *Aegopinella ressmanni* (WEST.) in the Pleistocene of Poland seems more probable, but again it may well be that *Retinella hiulca* (ALB.) had also a wider distribution in the Quaternary. This problem cannot however be definitively solved until a revision of all the known fossil specimens of these two species has been made.

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STRESZCZENIE

W pracy przedstawiono dwa spośród ponad 30 gatunków wczesnoplejstoceńskich ślimaków ze stanowiska Kielniki koło Częstochowy. Pierwszy jest gatunkiem nowym dla nauki, a drugi to prawdopodobnie żyjąca także współcześnie *Aegopinella ressmanni* (West.).

Aegopinella lozeki n.sp. ma charakterystyczną, silnie prążkowaną mikrorzeźbę na spodniej stronie skorupy, która w szerokim, miseczkowatym dołku osiowym jest wyraźnie widoczna na wszystkich skrętach.

Aegopinella ressmanni (West.) przez długi czas była mylona z *Retinella hiulca* (Alb.). Charakterystyczna dla *Ae. ressmanni* (West.) siateczkowata mikrorzeźba nie jest widoczna na okazach z Kielnik, co może być wynikiem znacznego uszkodzenia powierzchni skorupek. Dlatego bez materiału porównawczego kopalnych okazów *Retinella hiulca* (Alb.) nie można w sposób definitywny na tej podstawie stwierdzić, że mamy tu do czynienia z *Ae. ressmanni* (West.). Biorąc jednak pod uwagę rozprzestrzenienie zoogeograficzne obydwu gatunków, bardziej uzasadniona jest obecność w osadach z Kielnik *Ae. ressmanni* (West.), gdyż *Retinella hiulca* (Alb.) żyje dzisiaj na bardzo niewielkim obszarze, a co do jej występowania w czwartorzędzie brak jest pewnych danych.

РЕЗЮМЕ

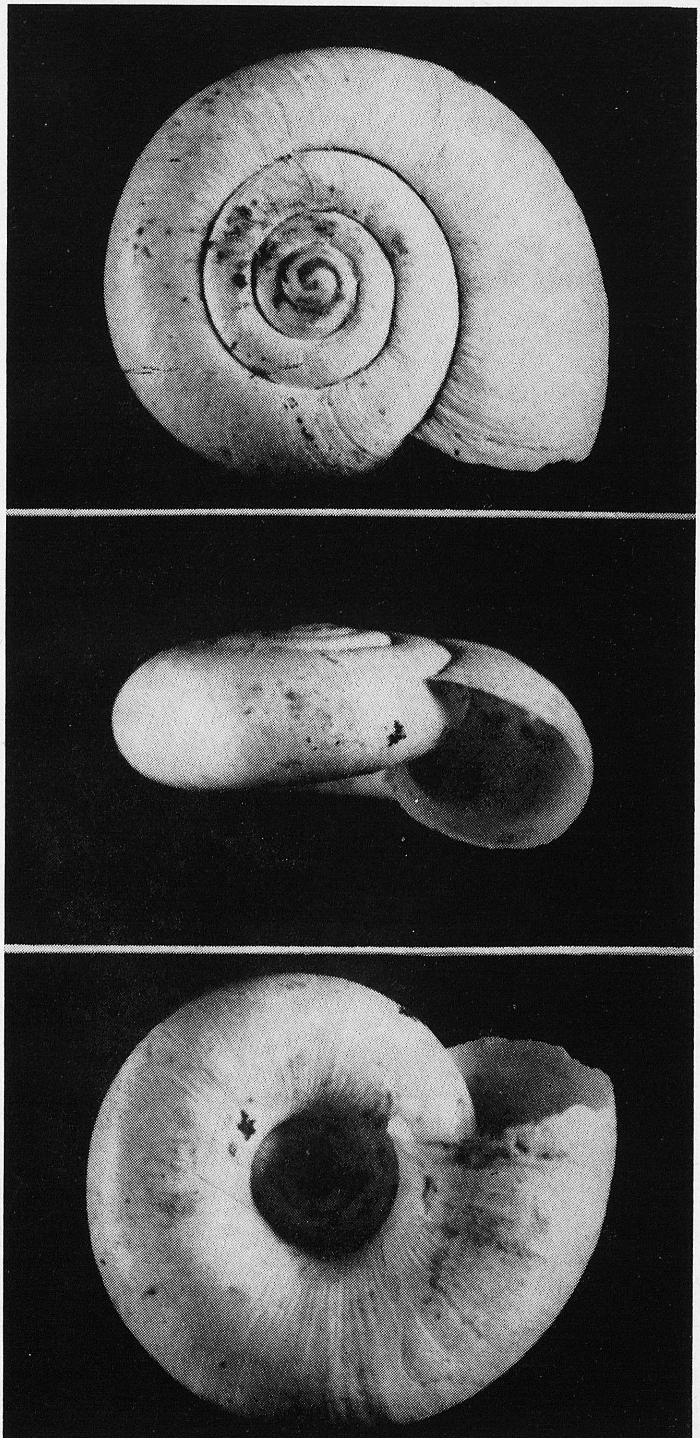
В работе представлено два среди более 30 видов улиток из раннего плейстоцена из стации Кельники около Ченстоховы (Средняя Польша). Первый является новым видом, а второй — вероятно, обитающая в настоящее время *Aegopinella ressmanni* (West.).

Aegopinella lozeki n.sp. имеет характерный, сильно полосатый микрорельеф на нижней стороне скорлупы, который в широкой тазикообразной выемке отчётливо виден на всех спиральных оборотах.

Aegopinella ressmanni (West.) продолжительное время была ошибочно путана из *Retinella hiulca* (Alb). Характерный для *Ae. ressmanni* (West.) сеточкообразный микрорельеф, не видимый на экземплярах из Кельник, что может быть вызвано повреждением поверхности скорлуп. Поэтому без сравнительного материала ископаемых экземпляров *Retinella hiulca* (Alb.) нельзя на этой основе окончательно констатировать, что мы имеем здесь дело из *Ae. ressmanni* (West.); однако приняв во внимание географическое распространение обоих видов, более обоснованным является присутствие в отложениях из Кельник *Ae. ressmanni* (West.), так как *Retinella hiulca* (Alb.) в настоящее время обитает на очень небольшой территории, а относительно её обитания в четвертичном периоде нет заслуживающих доверия данных.

Plate XXXIX

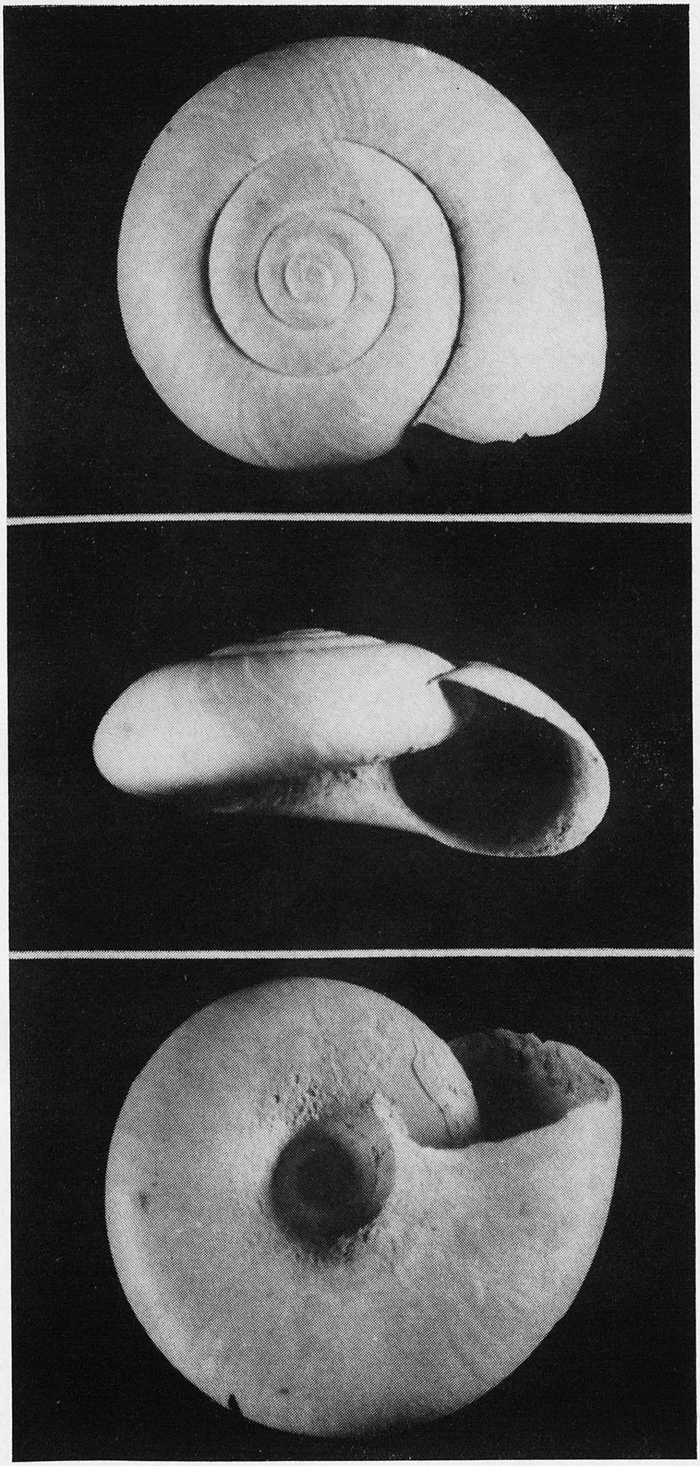
Aegopinella lozeki n.sp. — holotype, width 11,4 mm



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Plate XL

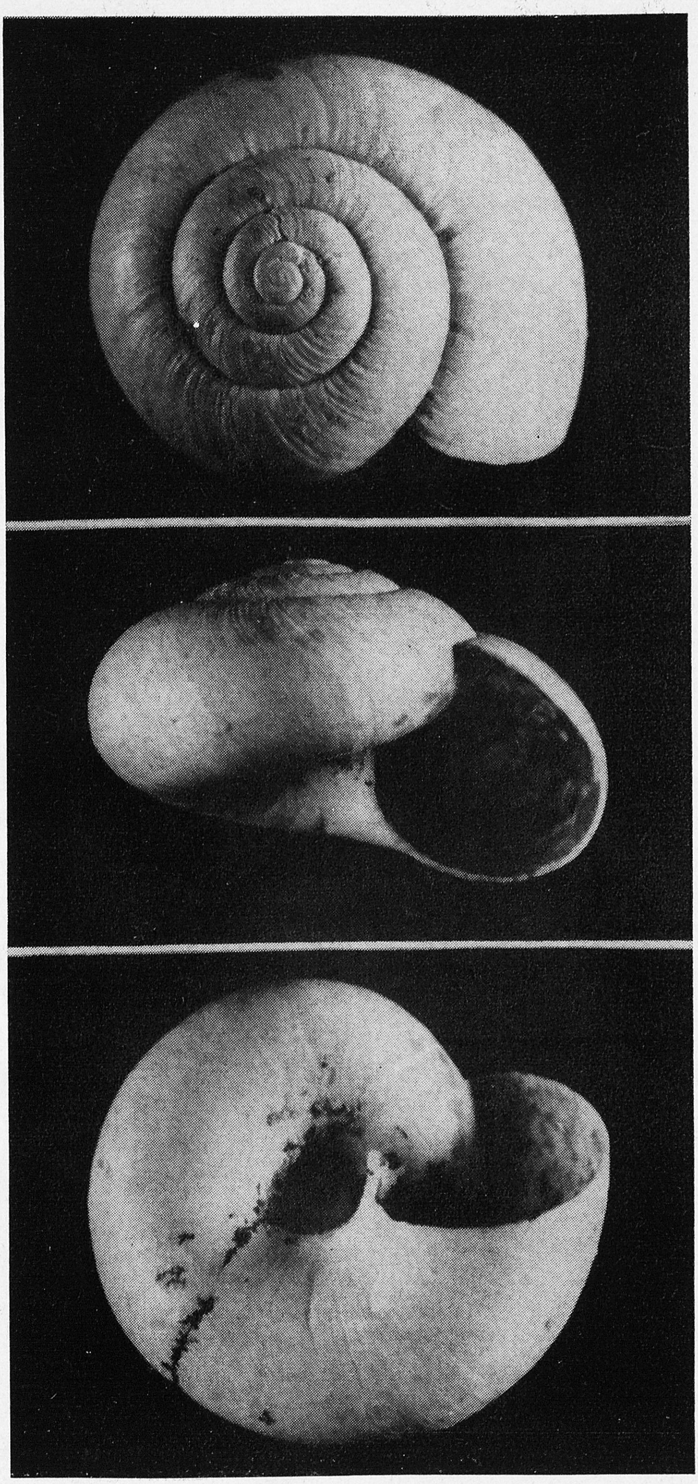
Hyalinia denudata Reuss — width 12 mm



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Plate XLI

Aegopinella ressmanni (West.) — width 13·5 mm



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Redaktor zeszytu: dr A. Szeptycki

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